Editorial

Neurostimulation

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Neurostimulation encompasses a broad range of invasive and noninvasive techniques that aim for enduring alterations of neuronal activity, or excitability. This bears enormous clinical potential, because pathological changes in neural activity are common in many diseases and neurostimulation techniques can be employed to attempt functional normalization of the neural circuitry. Further, neurostimulation techniques can facilitate insight into neurophysiological mechanisms underlying the development and maintenance of difficult-to-treat disorders and symptoms, as well as provide insight into a linkage between neurophysiological characteristics of neural networks and changes in functional and behavioral outcomes.

The field of neurostimulation has enormously expanded over the past decades. Technological progress in both biomedical sciences and neurostimulation industry facilitated advances in understanding neural changes in the central nervous system that represent functional targets for neurostimulation and mechanisms that underlie the neurostimulation effects. Hand in hand with growing knowledge, new open questions and challenges have emerged, facilitating further technological progress, translational research, and clinical applications in this cutting-edge biomedical field.

This special issue brings an exciting array of original reports and reviews that examine putative mechanisms and neurophysiological effects of invasive and noninvasive neurostimulation techniques, such as transcranial magnetic

stimulation, transcranial direct or alternating current stimulation, random noise stimulation, or motor cortex stimulation. Overall, this special issue advances the existing evidence on growing potential of neurostimulation in modern medicine and biomedical sciences.

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